

CLAIMS

1. A chemical vapor deposition apparatus comprising:
 - a deposition chamber defined at least in part by at least one of a chamber sidewall and a chamber base wall;
 - a substrate holder within the chamber;
 - at least one process chemical inlet to the deposition chamber;
 - at least one of the chamber sidewall and chamber base wall comprising a chamber surface having a plurality of purge gas inlets to the chamber therein, the purge gas inlets being separate from the at least one process chemical inlet; and
 - a purge gas inlet passageway in fluid communication with the purge gas inlets.
2. The apparatus of claim 1 wherein the deposition chamber has a sidewall, the chamber surface having the plurality of purge gas inlets being on the chamber sidewall.
3. The apparatus of claim 1 wherein the deposition chamber has a base wall, the chamber surface having the plurality of purge gas inlets is being on the chamber base wall.

4. The apparatus of claim 1 wherein the deposition chamber has a sidewall and a base wall, the plurality of purge gas inlets being on both the chamber sidewall and the chamber base wall.

5. The apparatus of claim 1 further comprising:
a foreline feeding from the deposition chamber to a vacuum pump; and
a purge gas outlet passageway which extends from the purge gas inlet passageway to the foreline and bypasses the plurality of purge gas inlets.

6. The apparatus of claim 1 wherein the purge gas inlets are substantially uniformly distributed over said chamber surface.

7. The apparatus of claim 1 wherein the purge gas inlets are of at least two inlet sizes.

8. The apparatus of claim 1 wherein the chamber includes a chamber outlet therefrom, at least some of the purge gas inlets further from the chamber outlet being larger than at least some of the purge gas inlets closer to the chamber outlet.

9. The apparatus of claim 1 wherein the purge gas inlet passageway comprises a plenum chamber to the purge gas inlets.

10. The apparatus of claim 1 wherein the purge gas inlets are configured for discharging purge gas to the chamber in a direction substantially transverse to the chamber surface.

11. The apparatus of claim 1 wherein the purge gas inlets are configured for discharging purge gas to the chamber in a direction substantially along the chamber surface.

12. A chemical vapor deposition apparatus comprising:
a chamber defined at least in part by chamber walls;
a chamber liner apparatus forming a deposition subchamber within the chamber;
a substrate holder within the deposition subchamber;
the chamber liner apparatus comprising a subchamber surface having a plurality of purge gas inlets to the subchamber therein; and
a purge gas inlet passageway in fluid communication with the purge gas inlets.

13. The apparatus of claim 12 wherein the liner apparatus has a sidewall, the subchamber surface having the plurality of purge gas inlets being on the sidewall.

14. The apparatus of claim 12 wherein the liner apparatus has a top wall, the subchamber surface having the plurality of purge gas inlets being on the top wall.

15. The apparatus of claim 12 wherein the liner apparatus has a sidewall and a top wall, the plurality of purge gas inlets being on both the sidewall and the top wall.

16. The apparatus of claim 12 wherein the purge gas inlets are substantially uniformly distributed over said subchamber surface.

17. The apparatus of claim 12 wherein the purge gas inlets are of at least two inlet sizes.

18. The apparatus of claim 12 wherein the subchamber includes a subchamber outlet therefrom, at least some of the purge gas inlets further from the subchamber outlet being larger than at least some of the purge gas inlets closer to the subchamber outlet.

19. The apparatus of claim 12 wherein the purge gas inlets are configured for discharging purge gas to the subchamber in a direction substantially transverse to the subchamber surface.

20. The apparatus of claim 12 wherein the purge gas inlets are configured for discharging purge gas to the subchamber in a direction substantially along the subchamber surface.

21. A chemical vapor deposition apparatus comprising:
a deposition chamber defined at least in part by chamber walls;
a substrate holder within the chamber, the substrate holder comprising support structure, the support structure comprising a surface exposed to the chamber, the surface comprising a plurality of purge gas inlets to the chamber therein; and

a purge gas inlet passageway in fluid communication with the purge gas inlets.

22. The apparatus of claim 21 wherein the purge gas inlets are substantially uniformly distributed over said surface.

23. The apparatus of claim 21 wherein the purge gas inlets are of at least two inlet sizes.

24. The apparatus of claim 21 wherein the chamber includes a chamber outlet therefrom, at least some of the purge gas inlets further from the chamber outlet being larger than at least some of the purge gas inlets closer to the chamber outlet.

25. The apparatus of claim 21 wherein the purge gas inlet passageway comprises a plenum chamber to the purge gas inlets.

26. The apparatus of claim 21 wherein the purge gas inlets are configured for discharging purge gas to the chamber in a direction substantially transverse to the surface.

27. The apparatus of claim 21 wherein the purge gas inlets are configured for discharging purge gas to the chamber in a direction substantially along the surface.

28. A deposition method comprising:

positioning a substrate within a deposition chamber defined at least in part by chamber walls, at least one of the chamber walls comprising a chamber surface having a plurality of purge gas inlets to the chamber therein;

providing a process gas over the substrate effective to deposit material onto the substrate; and

during the providing, emitting purge gas to the deposition chamber from the purge gas inlets effective to form an inert gas curtain over the chamber surface.

29. The method of claim 28 comprising emitting the purge gas to the chamber in a direction substantially transverse to the chamber surface and effective to form the inert gas curtain to comprise substantially turbulent gas flow proximate the chamber surface.

30. The method of claim 28 comprising emitting the purge gas to the chamber in a direction substantially along the chamber surface and effective to form the inert gas curtain to comprise substantially laminar gas flow proximate the chamber surface.

31. The method of claim 28 wherein the one chamber wall having the plurality of purge gas inlets is a sidewall.

32. The method of claim 28 wherein the one chamber wall having the plurality of purge gas inlets is a base wall.

33. The method of claim 28 wherein the deposition chamber comprises a sidewall and a base wall, the plurality of purge gas inlets being received on both the sidewall and the base wall.

34. The method of claim 28 wherein the deposition chamber includes an outlet therefrom, the emitting comprises emitting a greater volume of purge gas from at least some purge gas inlets located further from the chamber outlet than at least some purge gas inlets located closer to the chamber outlet.

35. The method of claim 28 wherein the chamber includes a chamber outlet therefrom, at least some of the purge gas inlets further from the chamber outlet being larger than at least some of the purge gas inlets closer to the chamber outlet, the emitting comprising emitting a greater volume of purge gas from the at least some purge gas inlets located further from the chamber outlet than from the at least some purge gas inlets located closer to the chamber outlet.

36. The method of claim 28 wherein the chamber wall having the chamber surface comprises a surface of a chamber liner apparatus forming a deposition subchamber within the chamber.

37. The method of claim 28 comprising chemical vapor deposition.

38. The method of claim 37 comprising atomic layer deposition.

39. A deposition method comprising:

positioning a substrate within a deposition chamber defined at least in part by chamber walls, the deposition chamber comprising a component received therein internally of the chamber walls, the component comprising a surface exposed to the chamber, the surface comprising a plurality of purge gas inlets to the chamber therein;

providing a process gas over the substrate effective to deposit material onto the substrate; and

during the providing, emitting purge gas to the deposition chamber from the purge gas inlets effective to form an inert gas curtain over the component surface within the deposition chamber.

40. The method of claim 39 wherein the component comprises a portion of a substrate support received internally of the chamber walls.

41. The method of claim 39 comprising emitting the purge gas to the chamber in a direction substantially transverse to the surface and effective to form the inert gas curtain to comprise substantially turbulent gas flow proximate the surface.

42. The method of claim 39 comprising emitting the purge gas to the chamber in a direction substantially along the surface and effective to form the inert gas curtain to comprise substantially laminar gas flow proximate the surface.

43. The method of claim 39 wherein the deposition chamber includes an outlet therefrom, the emitting comprises emitting a greater volume of purge gas from at least some purge gas inlets located further from the chamber outlet than at least some purge gas inlets located closer to the chamber outlet.

44. The method of claim 39 wherein the chamber includes a chamber outlet therefrom, at least some of the purge gas inlets further from the chamber outlet being larger than at least some of the purge gas inlets closer to the chamber outlet, the emitting comprising emitting a greater volume of purge gas from the at least some purge gas inlets located further from the chamber outlet than from the at least some purge gas inlets located closer to the chamber outlet.

45. The method of claim 39 comprising chemical vapor deposition.

46. The method of claim 45 comprising atomic layer deposition.